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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,089	02/26/2002	Hitoshi Takayanagi	020232	8614

23850 7590 07/08/2005

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EXAMINER

NOTE, JANIS L

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/082,089

Applicant(s)

TAKAYANAGI ET AL.

Examiner

Janis L. Dote

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8 and 18-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 8 and 18-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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1. The examiner acknowledges the cancellation of claim 13 and the amendments to claims 8 and 18 set forth in the amendment filed on Apr. 11, 2005. Claims 8 and 18-20 are pending.

2. The rejections under 35 U.S.C. 103(a) of claims 8 and 13 over US 6,265,125 B1 (Anno) combined with the other cited references set forth in the office action mailed on Jan. 12, 2005, paragraphs 7-10, have been withdrawn in response to the amendment to claim 8, adding the limitation that the "organic pigment is represented by Formula (8) (C.I.Pigment Red 188)." None of the cited prior art teaches or suggests a method of making spherical dry toners comprising C.I. Pigment Red 188 or the magenta pigment of Formula 8 recited in instant claim 8.

The rejections of claims 8, 13, 19, and 20, under 35 U.S.C. 103(a) over US 6,21,697 B2 (Takayanagi) combined with the other cited prior art set forth in the office action mailed on Jan. 12, 2005, paragraphs 13-15, have been withdrawn in response to the amendment to claim 8 described supra. None of the cited prior art teaches or suggests a method of making spherical dry toners comprising C.I. Pigment Red 188 or the magenta pigment of Formula 8 recited in instant claim 8.

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3. The disclosure is objected to because of the following informalities:

The instant specification at page 21, lines 1-2, identifies the organic pigment represented by Formula 8 as C.I. Pigment Red 188. However, according to the American Chemical Society (ACS) File Registry No. 61847-48-1, Formula 8 of the instant specification does not represent the chemical structure of C.I. Pigment Red 188. C.I. Pigment Red 188 comprises a "2-methoxyphenyl-aminocarbonyl group," not a "2-ethoxyphenyl-aminocarbonyl group" shown in Formula 8.

Appropriate correction is required.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 8 and 18-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 8 and 18 recite that the organic pigment represented by Formula 8 is C.I. Pigment Red 188. However, according to the

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American Chemical Society (ACS) File Registry No. 61847-48-1, Formula 8 of the instant specification does not represent the chemical structure of C.I. Pigment Red 188. C.I. Pigment Red 188 comprises a "2-methoxyphenyl-aminocarbonyl group," not a "2-ethoxyphenyl-aminocarbonyl group" shown in Formula 8. Accordingly, it is not clear what organic pigment is required in the instant claims, C.I. Pigment Red 188 or the pigment represented by Formula 8.

Claims 8 and 18 are further indefinite in the phrases "dissolving the polyester resin in an organic solvent, adding the colorant . . . to prepare a resin solution" (emphasis added) and "mixing the resin solution comprising the polyester resin . . . and an organic pigment" (emphasis added) for lack of unambiguous antecedent basis for the terms "the colorant" and "an organic pigment" in claims 8 and 18. Claims 8 and 18 both previously recite a toner comprising "a polyester resin . . . and an organic pigment." It is not clear whether "the colorant" refers to the previously recited "organic pigment" or to another colorant. It is also not clear whether "an organic pigment" in the mixing step refers to the "colorant" or the previously recited organic pigment or to another organic pigment.

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6. The following is a quotation of the first paragraph of 35

U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 19 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Instant claim 19 recites that the mixing of the resin solution with an aqueous medium in the presence of a base and a phase inversion accelerator is a "process of adding dropwise water while stirring at a circumferential speed within a range of 0.2-5 m/second."

Instant claim 20 recites that the mixing of the resin solution with an aqueous medium in the presence of a base and a phase inversion accelerator is a "process of adding dropwise water while stirring employing a stirrer, an anchor blade, a

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turbine blade, a faudler blade, a full-zone blade, a max blend blade, or a semicircular blade."

The originally filed specification does not provide an adequate written description of the process of adding dropwise water while stirring as recited in instant claims 19 and 20. The originally filed specification at page 38, lines 12-16, discloses a "method of adding dropwise water while stirring at low shear employing a stirrer, an anchor blade, a turbine blade, a faudler blade, a full-zone blade, a max blend blade, or a semicircular blade or the like at a circumferential speed within a range of 0.2-5 m/second" (emphasis added). Instant claims 19 and 20 do not recite that the stirring in the processes of adding dropwise water is "at low shear." The processes of adding dropwise water recited in instant claims 19 and 20 are broader than the disclosed process in the originally filed specification, because they include stirring not "at low shear," such as stirring "at high shear." Nor do the processes recited in instant claims 19 and 20 require both the particular stirring component and the circumferential speed disclosed in the originally filed specification.

Applicants' arguments, filed on Apr. 11, 2005, have been fully considered but they are not persuasive.

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Applicants assert that the recitation of "at low shear" at page 38, of the instant specification, is "a generalized description of what results from the stated conditions of blade or circumferential speed on page 38, lines 13-17, and is not meant as an additional limitation." Applicants "submit that it would be inappropriate to require the recitation of the additional limitation of 'low shear' in the claims, in view of how the term is used in the specification."

Applicants' arguments are not persuasive. As discussed in the above rejection, the originally filed specification at page 38, lines 12-16, states a "method of adding dropwise water while stirring at low shear employing a stirrer, an anchor blade, a turbine blade, a faudler blade, a full-zone blade, a max blend blade, or a semicircular blade or the like at a circumferential speed within a range of 0.2-5 m/second"

(emphasis added). In other words, the condition of low shear is met by employing both a particular blade and stirring the blade at a circumferential speed within a range of 0.2- 5 m/second. Claims 19 and 20 do not require both conditions, but only respectively require one of the conditions. The originally filed specification does not disclose that the dropwise addition of water is accomplished by the broadly recited processes recited in instant claims 19 and 20. Applicants have not

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indicated where in the originally filed specification there is disclosure for the dropwise addition steps broadly recited in the instant claims. Accordingly, the rejection of claims 19 and 20 stand.

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. The examiner has interpreted the claim language recited in instant claims 8 and 18 as requiring that the organic pigment or colorant in the resin solution be C.I. Pigment Red 188 having the chemical structure shown in ACS File Registry No. 61847-48-1. Rejections based on this interpretation are set forth infra.

10. Claims 8 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,265,125 B1 (Anno) combined with:
(1) US 5,079,123 (Nanya); (2) US 2002/0055619 A1 (Dietz);
(3) Herbst et al., Industrial Organic Pigments, pp. 288 and 308;
and (4) US 6,183,924 B1 (Nomura).

Anno discloses a magenta toner comprising spherical toner particles having a roundness of 0.986. See Table 3 at col. 20, toner N. The toner particles comprise a polypropylene wax as

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the anti-offset agent and polyester binder resin B, which has a carboxyl group and an acid value of 24.9 mg KOH/g, as the binder resin, wherein the magenta pigment C.I. Pigment Red 184 is dispersed therein. Table 2 at col. 15, polyester resin B; col. 16, lines 50-51; and col. 18, lines 26-47. The Anno polyester binder resin B meets the polyester resin having carboxyl group limitation recited in instant claim 8. Anno discloses that its toner can be used in processes to provide full-color images with no fogging. See col. 20, lines 53-54; and Table 4 at col. 23, example 2.

Anno does not exemplify a magenta toner comprising the organic pigment C.I. Pigment Red 188 recited in instant claims 8 and 18. However, Anno does not limit the type of magenta pigment used. Anno discloses that the "various known colorants, such as magenta color . . . may be used." Col. 9, lines 6-8.

C.I. Pigment Red 184 and C.I. Pigment Red 188 are commercially available organic pigments. See Herbst, Table 18 at page 288, P.R. 184 and P.R. 188. According to Herbst, Pigment Red 188 is an intense yellowish red pigment with very good fastness properties. Herbst further discloses that the organic pigment is "suited to all printing techniques." Page 308, lines 8-10.

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Dietz discloses a particular process for forming azo colorants using a microjet reactor. Paragraph 0006-0007. Dietz discloses that the azo colorants that can be prepared by the particular process include Pigment Red 184 and 188.

Paragraph 0022, line 11. Dietz teaches that the azo colorants prepared by its particular process can be used as colorants in electrophotographic toners. Paragraph 0075. Dietz demonstrates that when the azo pigments prepared by its particular process are used in a printing ink, the printing ink exhibited higher color strength, transparency, and gloss compared to their commercially customary counterparts. See examples 1-3 at pages 7-8.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Herbst and Dietz, to use the well-known C.I. Pigment Red 188 that is made by the process disclosed by Dietz as the organic pigment in the toner disclosed by Anno, because that person would have had a reasonable expectation of successfully obtaining a magenta toner having good fastness as taught by Herbst, and higher color strength and transparency, as taught by Dietz.

Anno does not exemplify a magenta toner comprising a carnauba wax as recited in instant claim 18. However, Anno

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discloses that the anti-offset agent can equally be a carnauba wax. Col. 9, lines 60-63.

Nanya discloses that toners comprising low molecular weight polyethylenes or polypropylenes can impart high resistance to the off-set phenomena but cannot sufficiently improve the fixing ability at low temperature." Col. 1, lines 55-60. Nanya also discloses that toners comprising carnauba wax as a release agent have both high resistance to the off-set phenomenon and excellent fixing ability at low temperatures. Nanya, col. 1, lines 61-63. However, the toners do not have high resistance to the winding phenomenon and cause toner filming. Nanya, col. 1, lines 64-65, and col. 2, line 7. Nanya discloses that carnauba wax, which comprises generally from 3 to 4 wt% of free aliphatic acids, cannot be thoroughly dispersed in the toner binder resin. Therefore, the wax tends to separate from the toner during the development process. Nanya, col. 2, lines 3-7, and 38-39. Nanya discloses that a carnauba wax "substantially free of aliphatic acids" overcomes the above problems. See Nanya, carnauba wax B in example 2 of Nanya, which comprises 0.7 wt% of free aliphatic acids. Nanya discloses that due to the removal of the aliphatic acids, the size of the wax crystal decreases to 1 μ m or less, when dispersed in the binder resin, which is much smaller than that of conventional carnauba wax. Nanya discloses

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that for this reason a toner comprising the carnauba wax substantially free of aliphatic acids is free from the previously-mentioned filming problems, and exhibits high resistance to both off-set and winding phenomena. Col. 2, lines 46-57.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Anno and Nanya, to use carnauba wax B taught by Nanya as the anti-offset agent in the toner rendered obvious over the combined teachings of Anno, Herbst, and Dietz, because that person would have had a reasonable expectation of successfully obtaining a toner that exhibits improved resistance to off-set, winding phenomena, and filming.

Anno does not disclose making its toner by the steps recited in instant claims 8 and 18. However, Anno discloses that its toner can be obtained by an emulsion dispersion granulation method. Col. 5, line 65.

Nomura discloses an emulsion dispersion granulation method which provides toner particles having a degree of roundness of not less than 0.97. Col. 4, lines 5-12. Nomura's method comprises the steps of: (1) dissolving or dispersing a binder resin in an organic solvent and adding a colorant and additives, such as a wax, to form a mixture; (2) mixing and emulsifying the

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mixture of step (1) with an aqueous medium in the presence of a base and "isopropyl alcohol" to cause a phase inversion emulsification to form spherical particles; (3) separating the spherical particles from the aqueous medium; and (4) drying the separated particles. Col. 9, line 44, to col. 10, line 37; col. 12, line 59, to col. 13, line 7; and toner preparation example 1 at col. 19.

Isopropyl alcohol meets the isopropanol compound recited in instant claims 8 and 18 that is identified as a phase inversion accelerator. Although Nomura does not explicitly identify isopropyl alcohol as a phase inversion accelerator, Nomura clearly teaches that its emulsifying step causes phase inversion emulsification. Hence, Nomura's isopropyl alcohol appears to be a phase inversion accelerator. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Nomura teaches that the binder resin can be a polyester resin having an acid value of 1 to 30. Col. 12, lines 20-21. As discussed supra, Anno's polyester binder resin B has an acid value of 24.9 mg KOH/g of binder resin. Nomura's method meets the steps of making a spherical toner as recited in instant claims 8 and 18, but for the particular magenta pigment of formula (1) recited in instant claims 8 and 18, and the carnauba wax recited in instant claim 18. However, as discussed supra,

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Anno teaches a spherical toner comprising a magenta pigment. As discussed supra, the combined teachings in Anno, Herbst, Dietz, and Nanya render obvious a spherical toner comprising a carnauba wax that meets the releasent compositional limitation recited in instant claims 18. Nomura discloses that its method provides toners where the additives, such as colorants and a wax, are dispersed and encapsulated. According to Nomura, when additives such as colorants are present on the surface of the toner particles, the triboelectricity of the toner is reduced.

Col. 6, lines 46-52; and col. 12, line 62, to col. 13, line 7.

Nomura also discloses that its emulsification process has the advantages over a pulverization process (the process exemplified in Anno) of greater ease of production and lower cost. Col. 7, lines 3-5. Nomura further discloses that its process easily provides toners with a sharp particle distribution which results in improved image quality. Col. 7, lines 11-13.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Anno and Nomura, to make the toner rendered obvious over the combined teachings of Anno, Herbst, Dietz, and Nanya by the emulsion dispersion granulation method disclosed by Nomura, such that the resultant toner has the roundness required by both Anno and Nomura, because that person would have had a reasonable expectation of

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successfully obtaining a magenta toner having the benefits disclosed by Anno and Nomura.

11. The following rejection set forth in paragraph 12, infra, is under 35 U.S.C. 103(a) over US 6,821,697 B2 (Takayanagi), which has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). The rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed

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invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(1)(1) and § 706.02(1)(2).

12. Claims 8, 18, 19, and 20 are rejected under 35 U.S.C. 103(a) as being obvious over US 6,821,697 B2 (Takayanagi) combined with Herbst and Dietz.

Takayanagi discloses a method of making spherical dry color toner that meets the steps recited in the instant claims, but for the particular magenta pigment of formula (1) recited in instant claims 8 and 18. The method disclosed by Takayanagi comprises the steps of: (1) dissolving or dispersing the polyester resin R1 and polyester resin R4, which have a carboxyl group and an acid number of 6.7 mg KOH/g and 10 mg KOH/g, respectively, in an organic solvent, adding a colorant and the releasant carnauba wax to form a resin mixture; (2) mixing and emulsifying the resin mixture of step (1) with an aqueous medium in the presence of a base and the phase inversion accelerator isopropyl alcohol, wherein water is added dropwise while stirring at a peripheral speed of 1.05 m/second to cause a phase inversion emulsification to form spherical particles; (3) separating the spherical particles from the aqueous medium; and (4) drying the separated particles. The resulting spherical

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dry color toner has an average roundness of 0.979. See col. 24, lines 10-40; and Table 8 at col. 26, example 15. Also see Table 1 at cols. 21-22, polyester resin R1 and polyester resin R4; Table 6 at col. 23, mill base MB16; and col. 24, lines 3-4. The polyester resins R1 and R4 and carnauba wax meet the binder resin and releasant compositional limitations recited in instant claims 8 and 18. The stirring in step (2) at a peripheral speed of 1.05 m/second meets the process limitations recited in instant claim 19. Takayanagi also teaches that said stirring in step (2) is at low shear employing a stirrer, an anchor blade, a turbine blade, FAUDLER blade, FULL ZONE blade, MAX BLEND blade or a semicircular blade, which meets the process limitation recited in instant claim 20. Col. 17, lines 33-41.

As discussed supra, the process disclosed by Takayanagi does not use particular organic pigment C.I. Pigment 188 recited in instant claims 8 and 18. However, Takayanagi does not limit the type of colorant used. Takayanagi discloses that the "colorant employed in the toner . . . is not specifically limited, and conventionally known colorants can be employed." Col. 12, lines 54-57.

C.I. Pigment Red 188 is commercially available organic pigment. See Herbst, Table 18 at page 288, P.R. 188. According to Herbst, Pigment Red 188 is an intense yellowish red pigment

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with very good fastness properties. Herbst further discloses that the organic pigment is "suited to all printing techniques." Page 308, lines 8-10.

Dietz discloses a particular process for forming azo colorants using a microjet reactor. Paragraph 0006-0007. Dietz discloses that the azo colorants that can be prepared by the particular process include Pigment Red 188. Paragraph 0022, line 11. Dietz teaches that the azo colorants prepared by its particular process can be used as colorants in electrophotographic toners. Paragraph 0075. Dietz demonstrates that when the azo pigments prepared by its particular process are used in a printing ink, the printing ink exhibited higher color strength, transparency, and gloss compared to their commercially customary counterparts. See examples 1-3 at pages 7-8.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Herbst and Dietz, to use the well-known C.I. Pigment Red 188 that is made by the process disclosed by Dietz as the colorant in the method of making a spherical dry toner disclosed by Takayanagi, because that person would have had a reasonable expectation of successfully obtaining a magenta toner having good fastness as

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taught by Herbst, and higher color strength and transparency, as taught by Dietz.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (703) 872-9306.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD

Jul. 2, 2005

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1700